

CISC 3115 TY2

# Exception and Call Stack

Hui Chen

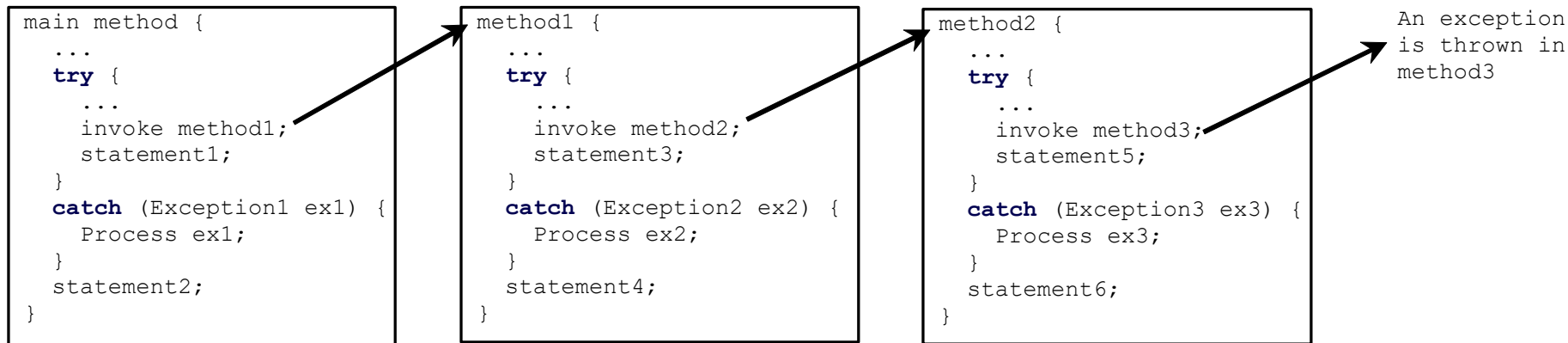
Department of Computer & Information Science

CUNY Brooklyn College

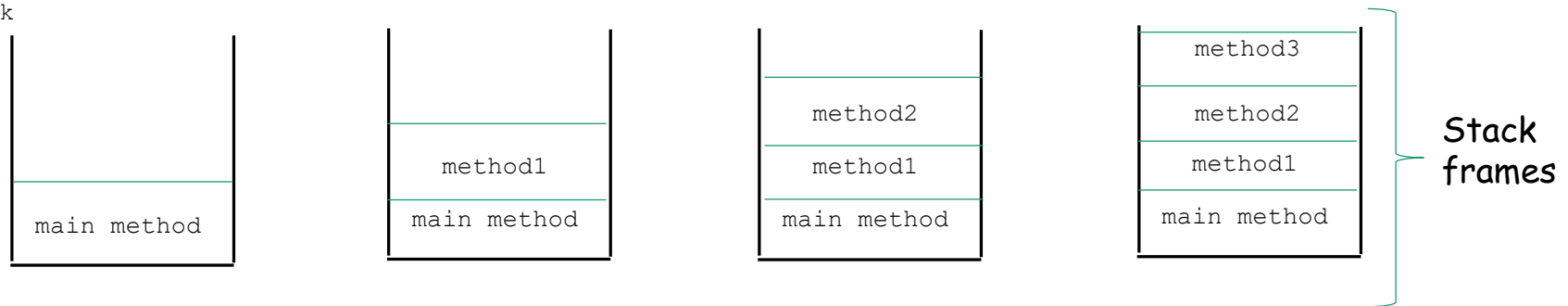
# Outline

- Discussed
  - Approaches to handle errors (what-if and exceptions)
  - Concept of Exception
  - The Java throwable class hierarchy
    - system errors, runtime exceptions, checked errors, unchecked errors
  - Methods of declaring, throwing, catching exception, and rethrowing exceptions
- Exception, call stack, stack frame, and stack trace

# Exception and Call Stack



Call Stack



# Example: Call Stack and Stack Trace

```
MINGW64:/c/Users/hui/work/course/CISC3115/SamplePrograms/C14aException/stacktrace
hui@ThinkpadE450 MINGW64 ~/work/course/CISC3115/SamplePrograms/C14aException/stacktrace (master)
$ javac StackTraceDemo.java

hui@ThinkpadE450 MINGW64 ~/work/course/CISC3115/SamplePrograms/C14aException/stacktrace (master)
$ ls
Course.class  StackTraceDemo.class  Student.class
Course.java   StackTraceDemo.java   Student.java

hui@ThinkpadE450 MINGW64 ~/work/course/CISC3115/SamplePrograms/C14aException/stacktrace (master)
$ java StackTraceDemo
Exception in thread "main" java.lang.IllegalStateException: No way to compute GPA if no courses.
    at Student.getGPA(Student.java:3)
    at Course.addStudent(Course.java:12)
    at StackTraceDemo.doSth(StackTraceDemo.java:10)
    at StackTraceDemo.main(StackTraceDemo.java:4)

hui@ThinkpadE450 MINGW64 ~/work/course/CISC3115/SamplePrograms/C14aException/stacktrace (master)
$
```

# Questions

- Concept of call stack and stack frame?
- Exception and stack trace?
- Local variables, method parameters, and call stack?